Published in final edited form as:

Ann Emerg Med. 2011 January ; 57(1): 29–30. doi:10.1016/j.annemergmed.2010.07.025.

Acute Heart Failure Guidelines: Moving in the Right Direction?

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In the June issue of the Journal of Cardiac Failure, the Heart Failure Society of America (HFSA) published its 2010 Comprehensive Heart Failure Practice Guideline designed to update and expand the 2006 Guideline.[1] Section 12 of the guideline, Evaluation and Management of the Patient with Acute Decompensated Heart Failure, is specifically directed at the practitioner evaluating patients with acute symptoms, including emergency physicians. This section provides guidance and recommendations for diagnosis, treatment and disposition of the patient being evaluated and treated for acute heart failure (AHF). However, a closer look at this guideline brings up several important points and suggestions about the development of subsequent guidelines for the treatment of AHF. While the Guideline offers useful recommendations for the care of the patient with AHF, it is largely based on expert consensus, retrospective in-hospital data, or observational levels of evidence, thus pointing out the evidence-base for AHF needs to be improved dramatically. For emergency physicians, this is particularly important as it relates to the early management of AHF, where there is a significant shortfall of evidence to offer guidance with Level A recommendations. This suggests the *a priori* collaboration by the major stakeholders, such as cardiology, EM, and internal medicine, is likely to facilitate research which will significantly improve the evidence base for both the early and late management of the AHF patient.

Guideline Synopsis for Emergency Medicine

The Guidelines focuses on three areas: diagnosis, prognosis and treatment. Table 1 compares the level of evidence for several recommendations from the HFSA, the American College of Emergency Physicians (ACEP) and the American Heart Association (AHA)/ American College of Cardiology (ACC) heart failure guidelines. While there are minor differences in the strength of evidence, this comparison points out the majority of recommendations in all the heart failure guidelines are less than level of evidence A. Indeed in Section 12 of the HFSA guideline there are 26 recommendations of which only 3 are level of evidence A. Table 1 also suggests that management issues that occur early in the course of AHF such as the use of non-invasive ventilation and early disposition are most likely to be addressed when the emergency physician is included in the guideline process as is the case with the HFSA and ACEP guidelines.

Evidence Based Guidelines Need More High Quality Evidence

Compared to the recent guidelines published for acute coronary syndromes by the AHA/ ACC, where large, multicenter randomized trials and Class 1, Level A evidence is the norm,

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AHF guidelines are based on a paucity of high quality data. [2,3] Until recently, studying AHF patients early in their course of disease was felt to be an unobtainable goal. However, the maturation of EM researchers along with improved collaboration between emergency physicians and cardiologists have made methodologically sound, emergency department-based AHF research a reality.[4] The need for a better evidence base in AHF was highlighted at a meeting of emergency physicians and cardiologists at the National Heart, Lung and Blood Institute. This meeting identified several high-priority areas of research, with an overarching aim of improving the evidence base, and subsequently AHF patient care.[5] These two major research directions identified were: 1) The need for early risk stratification to distinguish between low risk patients who may return home with an outpatient appointment or who may be transferred to an Observation Unit, and patients at higher risk who require hospitalization or Intensive Care Unit admission; and, 2) A better understanding of the pathophysiologic contributions to early cardiac and non-cardiac organ injury and the potential contribution of acute therapy to this injury. More importantly, it was recognized that answers to these questions will only come if we design and conduct trials in the emergency department as well as develop collaborations with our cardiology and internal medicine colleagues.

Cross Specialty Guideline Collaboration is Important

Similar to that advocated for patient care and research, guideline collaboration on the professional societal level is also extremely important. Traditionally, cross-specialty participation on guideline committees has been negligible. While synopses for EM physicians have previously been published in the EM literature, co-authored by EM and cardiology, guideline participation has been limited[6–8] EM representation on the current HFSA guidelines is clearly a step in the right direction, as critical aspects of EM care are discussed as part of guideline development. However, we need to have similar participation, in greater numbers, on many of the guidelines which impact EM physicians. Ideally, society representatives would meet prior to guideline development to nominate appropriate representatives. This not only increases content expertise from several disciplines, it also increases the probability the guidelines will be broadly generalizable to a number of societies and physicians.

The current Guideline forms a reasonable initial foundation for patient care as we work collaboratively to develop higher levels of evidence. More importantly, they highlight the evidence chasm which must be bridged through cross-specialty programs of clinical research and subsequent evidence-informed guideline development.

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Topic	Society and Level of Evidence		
	<i>HFSA</i>	<i>ACEP</i>	<i>ACC/AHA</i>
Natriuretic Peptides for Diagnosis	A	B	A
Diuretics for fluid overload	B	B	B
Intravenous Vasodilators	B	B – nitroglycerin C- nesiritide	B
Ultrafiltration	B	N/A	B
Non-invasive ventilation	A	B - CPAP C -BiPAP	N/A
Disposition Decision Making	C	C	N/A

N/A- not applicable because the topic was not addressed

CPAP- continuous positive airway pressure

BiPAP- Bilevel positive airway pressure